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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/888,896	Applicant(s) KATAHARA ET AL.	
	Examiner Glenda P. Rodriguez	Art Unit 2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *10 and 25* is/are allowed.

6)☒ Claim(s) *1-9,11-24 and 26-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 7, 8, 9, 13, 16, 18, 20, 21, 32, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada (JP 5175565) in view of Kumagai (JP 10320724A).

Regarding Claim 1, Shimada teaches a disk unit in which an arm having a head on a top is actuated, while a disk is rotated, so that a position of the head is moved with respect to the disk to perform write and read of data to and from the disk by the head (It is inherent that a disk unit has an arm (also called transducer) to perform write/read operations. See Fig. 2, block 5. Shimada teaches a disk unit.), comprising:

A temperature sensor for detecting a temperature (JP 5175565; Fig. 2, Block 4);

And heating means for heating when said temperature sensor detects a temperature, which is less than a predetermined first temperature (JP 5175565; Page 10, [0010]).

Shimada fails to teach that the sensor is located inside the disk unit. However, this feature is well known in the art as disclosed by Kumagai, wherein it teaches a sensor located inside the disk unit (JP 10320724;A See Fig 1, Element 20. Kumagai teaches a

humidity sensor, but it is known in the art, that in order to measure humidity, the medium has to be able to measure the temperature, due to the fact that at a specific temperature (dew point temperature) the formation of dew may occur inside the disk units environment.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the sensor to be inside the disk unit because prevent damage to the disk (JP 10320724 [0006]).

Regarding Claim 4, Shimada teaches all the limitation of Claim 1. Shimada further teaches a heating apparatus (JP 5175565; Fig. 2, Block 9).

Regarding Claim 7, Shimada teaches all the limitations of Claim 1. Shimada further teaches a disk unit according to claim 1, wherein said disk unit further comprises a communication circuit for communication with a host, and when said temperature sensor detects a temperature which is less than the first temperature, said communication circuit informs the host that heating is performed (JP 5175565; Fig. 2, Block 30 and Page 15 [0018] and [0019]. Shimada teaches the use of a host CPU.).

Regarding Claim 8, Shimada teaches all the limitations of Claim 1. Shimada further teaches a disk unit according to claim 1, wherein said disk unit further comprises a control circuit for controlling an operation of said disk unit, and when said temperature sensor detects a temperature which is less than a predetermined second temperature lower than the first temperature, said control circuit stops the operation of said disk (JP 5175565; Fig. 2, Block 7 and Page 15, [0018] and [0019]. Shimada teaches that when

hard disk is inoperable, the controller emits an OFF signal from an ON signal. The controller monitors the temperature detected by the temperature detector.).

Regarding Claim 9, Shimada teaches all the limitations of Claim 8. Shimada further teaches wherein said disk unit further comprises a communication circuit for communication with a host, and when said temperature sensor detects a temperature which is less than the second temperature, said communication circuit informs the host that said disk unit is not operable (JP 5175565; Fig. 2, Elements 7, 29, and 30 and Page 15, [0018] and [0019]. In Fig. 2, Shimada teaches a CPU (30) that has a direct connection (29) to the controller (7), which informs the CPU whenever the hard disk in inoperable because of intolerable temperature and will not enable the hard disk unless the temperature is operable.).

Regarding Claim 13, Shimada teaches a disk unit in which an arm having a head on a top is actuated, while a disk is rotated, so that a position of the head is moved with respect to the disk to perform write and read of data to and from the disk by the head, comprising:

> A temperature sensor for detecting a temperature (JP 5175565; Fig. 2, Block 4);
>
> And a heat generation suppressing means for suppressing generation of heat when said temperature sensor detects a temperature exceeding a predetermined third temperature lower (JP 5175565; Page 14, [0016]).

Shimada fails to teach that the sensor is located inside the disk unit. However, this feature is well known in the art as disclosed by Kumagai, wherein it teaches a sensor located inside the disk unit (JP 10320724;A See Fig 1, Element 20. Kumagai teaches a humidity sensor, but it is known in the art, that in order to measure humidity, the medium has to be able to measure the temperature, due to the fact that at a specific temperature (dew point temperature) the formation of dew may occur inside the disk units environment.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the sensor to be inside the disk unit because prevent damage to the disk (JP 10320724 [0006]).

Regarding Claim 16, Shimada teaches all the limitations of Claim 1. Shimada further teaches wherein said disk unit further comprises a communication circuit for communication with a host, and when said temperature sensor detects a temperature exceeding the third temperature, said communication circuit informs the host that generation of heat is suppressed (JP 5175565; Fig. 2, Elements 7, 29, and 30 and Page 15, [0018] and [0019]. In Fig. 2, Shimada teaches a CPU (30) that has a direct connection (29) to the controller (7), which informs the CPU whenever the hard disk in inoperable because of intolerable temperature and will not enable the hard disk unless the temperature is operable.).

Regarding Claim 18, Shimada teaches a disk unit in which an arm having a head on a top is actuated, while a disk is rotated, so that a position of the head is moved with

respect to the disk to perform write and read of data to and from the disk by the head, said disk unit comprising:

> A humidity sensor for detecting humidity (JP 5175565; Fig. 2, Element 3);
>
> And heating means for heating when said humidity sensor detects a humidity exceeding a predetermined humidity (JP 5175565; Page 15, [0017]. Shimada teaches the use of a dehumidifying unit that eliminates the humidity produced inside the disk drive.).

Shimada fails to teach that the sensor is located inside the disk unit. However, this feature is well known in the art as disclosed by Kumagai, wherein it teaches a sensor located inside the disk unit (JP 10320724A; See Fig 1, Element 20. Kumagai teaches a humidity sensor.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the sensor to be inside the disk unit because prevent damage to the disk (JP 10320724 [0006]).

Regarding Claim 20, Shimada teaches all the limitations of Claim 18. Shimada further teaches wherein said disk unit further comprises a second motor for driving said arm, and said heating means includes means for heating by conducting through said second motor a current which is unnecessary for operation of said arm, at time of stop of operation of said arm (JP 5175565; Fig. 2, Block 7 and Page 15, [0018] and [0019]. Shimada teaches that when hard disk is inoperable, the controller emits an OFF signal, therefore disabling the hard disk and stopping the operation of the arm.).

Regarding Claim 21, Shimada teaches all the limitation of Claim 18. Shimada further teaches a heating apparatus (JP 5175565; Fig. 2, Block 9).

Regarding Claim 32, Shimada teaches an information processing apparatus having a disk unit for performing reading and writing of information for a disk of the disk unit via an interface, said information processing apparatus comprising:

> A temperature sensor for detecting a temperature (JP 5175565; Fig. 2, Element 4);
>
> And a control circuit for controlling a heating value of said disk unit in accordance with a temperature detected by said temperature sensor (JP 5175565; Fig. 2, Element 7. Shimada teaches a controller that monitors the temperature in the disk drive.).

Regarding Claim 33, Shimada teaches all the limitations of Claim 32. Shimada further teaches wherein said control circuit causes a current to conduct through a fixed phase of a motor for rotating a disk of said disk unit, when said temperature sensor detects a temperature which is lower than a predetermined temperature (JP 5175565; See [0018] and [0019]. Shimada teaches while the temperature in within an acceptable range, the controller does not disable the disk drive.).

Regarding Claim 34, Shimada teaches all the limitations of Claim 32. Shimada further teaches wherein when said temperature sensor detects a temperature which is out of a predetermined temperature range, said disk unit informs via said interface that said disk unit is not operable (JP 5175565; Fig. 2, Elements 7, 29, and 30 and Page 15,

[0018] and [0019]. In Fig. 2, Shimada teaches a CPU (30) that has a direct connection (29) to the controller (7), which informs the CPU whenever the hard disk in inoperable because of intolerable temperature and will not enable the hard disk unless the temperature is operable.).

Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada (JP 5174565) and Kumagai (JP 10320724A).

Regarding Claim 3, Shimada and Kumagai teaches all the limitations of Claim 1. Shimada and Kumagai fail to teach wherein said disk unit further comprises a second motor for driving said arm, and said heating means includes means for heating by conducting through said second motor a current which is unnecessary for operation of said arm. It is obvious to a person of ordinary skill in the art to know that by energizing the second motor with an operational current the medium is heating the medium without actually using the second motor. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order to make the medium able to heat the second motor in order to energize the motor for any operations that the medium would be able to perform.

Claims 2, 5, 14, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada and Kumagai as applied to claim 1, 13 and 18, respectively above, and further in view of Li (US Patent No. 6, 385, 007).

Regarding Claim 2 and 19, Shimada and Kumagai teaches all the limitations of Claim 1 and 18, respectively. Shimada and Kumagai fail to teach wherein said disk unit further comprises a first motor for driving said a disk, and said heating means includes

means for heating by conducting a current through a fixed phase of said first motor. However, this feature is well known in the art as disclosed by Li, wherein it teaches that the disk drive device receives in the Peltier element (monitors the temperature in the disk drive) the heat developed by the spindle motor (Pat. No. 6, 385, 007; Col. 5, Lines 8-30). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada and Kumagai's invention in order for the medium to have a motor and provide heat to the motor in order to make the driving motor operable when performing read and /or write operations.

Regarding Claims 5, 14 and 22, Shimada and Kumagai teach all the limitations of Claim 1, 13 and 18, respectively. Shimada and Kumagai fail to teach that a Peltier element is included in a heating means. However, this feature is well known in the art as disclosed by Li, wherein it teaches a Peltier element used for controlling the temperature in a disk drive (Pat. No. 6, 385, 007; Col. 9, Line 62 to Col. 10, Line 6). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the medium to have a Peltier element in order to control the temperature of the medium in order to prevent the hard disk to be inoperable when performing recording and/or reproducing operations.

Claim 6 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada in view of Olarig et al. (US Patent No. 5, 280, 603) and Kumagai (JP 10320724A).

Regarding Claim 6, Shimada teaches a disk unit in which an arm having a head on a top is actuated, while a disk is rotated, so that a position of the head is moved with

respect to the disk to perform write and read of data to and from the disk by the head, comprising:

A temperature sensor for detecting a temperature (JP 5174565; Fig. 2, Element 4);

A control circuit (JP 5174565; Fig. 2, Element 7).

Shimada further discloses that the temperature detector send temperature values read in the disk drive to the controller are determined by a timer (Pat. JP 5174565; Page 9, [0009]). Shimada further discloses that the humidity detector send humidity values read in the disk drive to the controller are determined by a timer (Pat. JP 5174565; Page 9, [0009]). Shimada fails to teach that the sensor is located inside the disk unit. However, this feature is well known in the art as disclosed by Kumagai, wherein it teaches a sensor located inside the disk unit (JP 10320724;A See Fig 1, Element 20. Kumagai teaches a humidity sensor, but it is known in the art, that in order to measure humidity, the medium has to be able to measure the temperature, due to the fact that at a specific temperature (dew point temperature) the formation of dew may occur inside the disk units environment.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the sensor to be inside the disk unit because prevent damage to the disk (JP 10320724 [0006]). Shimada and Kumagai fail to teach a clock generating circuit for generating a plurality of sorts of operational clocks which are mutually different in frequency; and a control circuit for controlling an operation of said disk unit in such a manner that upon receipt of any one sort of operational clock from said clock generating circuit, a

processing is performed at a processing speed according to a frequency of the received operational clock, wherein said control circuit operates at an operational clock different in accordance with a temperature. However, this feature is known in the art, as disclosed by Olarig et al., wherein it teaches a memory controller device that the frequency changes according to the temperature read by the temperature sensor (Pat. No. 6, 564, 288; Col. 4, Lines 33-47. Because the frequency changes according to the temperature read by the sensor, the operational clocks are different operational clocks). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order to make the controller able to depend on the temperature read by the sensor in order to prevent the excessive temperature to damage the disk.

Regarding Claim 23, Shimada teaches a disk unit in which an arm having a head on a top is actuated, while a disk is rotated, so that a position of the head is moved with respect to the disk to perform write and read of data to and from the disk by the head, said disk unit comprising:

A humidity sensor for detecting a humidity (Fig. 2, Element 3);

A control circuit (Fig. 2, Element 7).

Shimada further discloses that the humidity detector send humidity values read in the disk drive to the controller are determined by a timer (Pat. JP 5174565; Page 9, [0009]). Shimada fails to teach that the sensor is located inside the disk unit. However, this feature is well known in the art as disclosed by Kumagai, wherein it teaches a sensor

located inside the disk unit (JP 10320724;A See Fig 1, Element 20. Kumagai teaches a humidity sensor, but it is known in the art, that in order to measure humidity, the medium has to be able to measure the temperature, due to the fact that at a specific temperature (dew point temperature) the formation of dew may occur inside the disk units environment.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the sensor to be inside the disk unit because prevent damage to the disk (JP 10320724 [0006]). Shimada and Kumagai fail to teach a clock generating circuit for generating a plurality of sorts of operational clocks which are mutually different in frequency; and a control circuit for controlling an operation of said disk unit in such a manner that upon receipt of any one sort of operational clock from said clock generating circuit, a processing is performed at a processing speed according to a frequency of the received operational clock, wherein said control circuit operates at an operational clock different in accordance with a humidity. However, this feature is known in the art, as disclosed by Olarig et al., wherein it teaches a memory controller device that the frequency changes according to the temperature read by the temperature sensor (Pat. No. 6, 564, 288; Col. 4, Lines 33-47. It would have been obvious that if the temperature sensor could be replaced by a humidity sensor in order to also monitor the humidity generated by the disk. Because the frequency changes according to the temperature read by the sensor, the operational clocks are different operational clocks). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order to make the controller able to depend on the

humidity read by the sensor in order to prevent the excessive humidity to damage the disk.

Claim 28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagisawa (US Patent 6, 236, 532) in view of Takeshi (JP 05-109261).

Regarding Claim 28, Yanagisawa teaches a disk unit in which an arm having a head on a top is actuated, while a disk is rotated, so that a position of the head is moved with respect to the disk to perform write and read of data to and from the disk by the head (Pat. No. 6, 236, 532; See Abstract), Yanagisawa fails to teach of a double-structure for the disk drive. However, this feature is well known in the art as disclosed by Takeshi, wherein it teaches base and cover plate is hollow (therefore having a first outline and a second outline) and it contains a dehumidifier between the first outline and second outline. (JP 05-109261, See Constitution). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Yanagisawa's invention in order for the medium to be able to have a double-structure body in order to protect the medium from temperature and humidity that is found on the medium's surroundings.

Regarding Claim 31, Yanagisawa and Takeshi teach all the limitations of Claim 28. Yanagisawa further discloses that the housing has an air vent, which permits air to flow through in the disk drive (Pat. No. 6, 236, 532; See Abstract). Yanagisawa fails to teach the use of a second outline However, this feature is well known in the art as disclosed by Takeshi, wherein it teaches base and cover plate is hollow (therefore having a first outline and a second outline) (JP 05-109261, See Fig. 1 and Constitution).

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Yanagisawa's invention in order for the medium to be able to have a double-structure body in order to protect the medium from temperature and humidity that is found on the medium's surroundings.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagisawa and Branc et al. as applied to claim 28 above, and further in view of O'Sullivan (US Patent No. 4, 980, 786). Yanagisawa and Branc et al. teach all the limitations of Claim 28. Yanagisawa and Branc et al. fail to teach that the first housing has a insulator. However, this feature is disclosed by O'Sullivan, wherein it teaches a disk drive housing that has an insulator (Patent No. 4, 980, 786; See Abstract). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Yanagisawa in order to for the housing to have an insulator in order to isolate adequately the disk medium.

Claim 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada and Kumagai as applied to claim 13 above, and further in view of Mori et al. (US Patent No. 5, 594, 603).

Regarding Claim 15, Shimada and Kumagai teach all the limitations of Claim 13. Shimada and Kumagai fail to teach that the controller informs a host whenever the temperature exceeds a third temperature. However, this feature is well known in the art as disclosed by Mori et al., wherein it informs the host whenever a temperature is performing a countermeasure whenever the temperature exceeds a given temperature (Pat. No. 5, 594, 603; Col. 16, Lines 21-30). It would have been obvious to a person of

ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the medium to be able to inform to the host whenever the information exceed a given threshold in order to do perform a countermeasure and control the temperature in the disk drive whenever it surpasses its maximum value.

Regarding Claim 17, Shimada teach all the limitations of Claim 13. Shimada fail to teach that the controller informs a host whenever the temperature exceeds a third temperature and informs that the medium is not operable. However, this feature is well known in the art as disclosed by Mori et al., wherein it informs the host whenever a temperature is performing a countermeasure whenever the temperature exceeds a given temperature (Pat. No. 5, 594, 603; Col. 16, Lines 21-30). It is obvious that if the medium informs when the medium exceed a given threshold, then the medium can be able to inform that the medium is inoperable (Shimada's invention inactivates the medium if the temperature is too high. See JP 174565; [0018] and [0019]). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the medium to be able to inform to the host whenever the information exceed a given threshold in order to do perform a countermeasure and control the temperature in the disk drive whenever it surpasses its maximum value.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada in view of Fukuzono et al. (US Patent No. 6, 409, 380). Shimada teaches all the limitations of Claim 23. Shimada fails to teach wherein said disk unit further comprises a communication circuit for communication with a host, and when said humidity a

sensor detects a humidity exceeding the predetermined humidity, said communication circuit informs the host that heating is performed. However, this feature is known in the art as disclosed by Fukuzono et al., wherein it teaches a magnetic recording medium wherein it measures the humidity and displays a message whether the humidity exceeded a predetermined humidity (Col. 5, Lines 1-54. Fukuzono et al. teach that by a measuring the temperature the medium calculates the dew or humidity at that precise time and that is displayed in the display.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the medium to be able to inform to the host whenever the information exceed a given threshold in order to do perform a countermeasure and control the humidity in the disk drive whenever it surpasses its maximum value.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada and Kumagai (JP 10320724A) in view of Okada et al. (US Patent No. 6, 530, 034).

Regarding Claim 11, Shimada teaches a disk unit in which an arm having a head on a top is actuated, while a disk is rotated, so that a position of the head is moved with respect to the disk to perform write and read of data to and from the disk by the head (It is inherent that a disk unit has an arm (also called transducer) to perform write/read operations. See Fig. 2, block 5. Shimada teaches a disk unit), comprising:

A temperature sensor for detecting a temperature (JP 5174565; Fig. 2, Element 4);

Shimada fails to teach that the sensor is located inside the disk unit. However, this feature is well known in the art as disclosed by Kumagai, wherein it teaches a sensor located inside the disk unit (JP 10320724;A See Fig 1, Element 20. Kumagai teaches a humidity sensor, but it is known in the art, that in order to measure humidity, the medium has to be able to measure the temperature, due to the fact that at a specific temperature (dew point temperature) the formation of dew may occur inside the disk units environment.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the sensor to be inside the disk unit because prevent damage to the disk (JP 10320724 [0006]). Shimada and Kumagai fail to teach an access circuit for accessing said disk, wherein said access circuit performs, when writing of data into said disk is performed in a case where said temperature sensor detects a temperature which is out of a predetermined temperature range, a writing confirmation operation for comparing written data with read data through reading data written into said disk. However, this feature is known in the art as disclosed by Okada et al., wherein it teaches that a circuit that includes a thermal asperity detector that is able to detect an increase in temperature (known in the art as an asperity) during a writing operation and compares the data to check if any data recovery needs to be done in the medium (Pat. No. 6, 530, 034; See Fig. 1, Fig. 4 and Col. 2, Lines 18-31). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the medium to be able to detect any rise in temperature in order to recover the data being lost during a data recording operation.

Regarding Claim 12, Shimada, Kumagai and Okada et al. teach all the limitations of Claim 11. Okada et al further teach wherein said access circuit again writes the written data into a same area on said disk and again reads the written data in a case where it is decided by the writing confirmation operation that the written data is not coincident with the read data, and said access circuit writes the written data into a different area on said disk in a case where it is again decided by the writing confirmation operation that the written data is not coincident with the read data (Pat. No. 6, 530, 034; Fig. 4). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Shimada's invention in order for the medium to be able to detect any rise in temperature in order to recover the data being lost during a data recording operation.

Claim 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yotsuya et al. (US Patent No. 6, 335, 843) and Kumagai (JP 10320724A) in view of Okada et al. (US Patent No. 6, 530, 034) and Schanezer et al. (US Patent No. 6, 046, 871).

Regarding Claim 26, Yotsuya et al. teach a disk unit in which an arm having a head on top is actuated, while a disk is rotated, so that a position of the head is moved with respect to the disk to perform write and read of data to and from the disk by the head (See Fig. 6), said disk unit comprising:

A humidity sensor for detecting a humidity (See Fig. 6, Element 91);

And an access circuit for accessing said disk (See Fig. 6. Yotsuya et al. teach a circuit that accesses the disk to perform reading/writing operations),

Wherein said access circuit performs, when writing of data into said disk is performed in a case where said humidity sensor detects a humidity exceeding a predetermined humidity (See Fig. 14, wherein Yotsuya et al. teach that when the medium exceeds a predetermined humidity while performing a writing operation in the medium.).

Yostuya et al. fails to teach that the sensor is located inside the disk unit. However, this feature is well known in the art as disclosed by Kumagai, wherein it teaches a sensor located inside the disk unit (JP 10320724;A See Fig 1, Element 20. Kumagai teaches a humidity sensor, but it is known in the art, that in order to measure humidity, the medium has to be able to measure the temperature, due to the fact that at a specific temperature (dew point temperature) the formation of dew may occur inside the disk units environment.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Yostuya et al.'s invention in order for the sensor to be inside the disk unit because prevent damage to the disk (JP 10320724 [0006]). Yostuya et al. fails to teach that it performs a data verification after the medium detect that the humidity is exceeded. However, this feature is well known in the art as disclosed by Okada et al., wherein it teaches that a circuit that includes a thermal asperity detector that is able to detect an increase in temperature (known in the art as

an asperity) during a writing operation and compares the data to check if any data recovery needs to be done in the medium (Pat. No. 6, 530, 034; See Fig. 1, Fig. 4 and Col. 2, Lines 18-31). It would have been obvious to a person of ordinary skill in the art to know that humidity and temperature are environmental factors that must be avoided in order to prevent a failure during reading and writing of the disk drive (Pat. No. 6, 046, 871; Col. 1, Lines 47-63). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Yotsuda et al. and Kumagai's invention in order to monitor and restore the data being lost during a data recording operation.

Regarding Claim 27, Yotsuya et al. Kumagai, Okada et al. (US Patent No. 6, 530, 034) and Schanezer et al. teach all the limitations of Claim 26. Okada et al further teach wherein said access circuit again writes the written data into a same area on said disk and again reads the written data in a case where it is decided by the writing confirmation operation that the written data is not coincident with the read data, and said access circuit writes the written data into a different area on said disk in a case where it is again decided by the writing confirmation operation that the written data is not coincident with the read data (Pat. No. 6, 530, 034; Fig. 4). It would have been obvious to a person of ordinary skill in the art to know that humidity and temperature are environmental factors that must be avoided in order to prevent a failure during reading and writing of the disk drive (Pat. No. 6, 046, 871; Col. 1, Lines 47-63). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made,

to modify Yotsuda et al.'s invention in order to monitor and restore the data being lost during a data recording operation.

Allowable Subject Matter

Claims 10 and 25 are allowed. The prior art alone or inter alia teaches a disk unit that comprises a thermal and humidity sensor and a controller that is able to read and write by a use of an arm actuator. But the prior art fails to teach an outline having a door which opens and closes in accordance with a control, wherein said control circuit causes said door to open when said humidity sensor detects a humidity or temperature exceeding a predetermined humidity.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (703)305-8411. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (703)308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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gpr
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